Fearful Intimacies

COVID-19 and the Reshaping of Human–Microbial Relations

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ABSTRACT: This article explores how COVID-19 could be reshaping human–microbial relations in and beyond the home. Media sources suggest that intimacies of companionability or ambivalence are being transformed into those of fearfulness. While a probiotic sociocultural approach to human–microbial relations has become more powerful in recent times, it seems that health and hygiene concerns associated with COVID-19 are encouraging the wholesale use of bleach and other cleaning agents in order to destroy the potential microbial ‘enemies’ in the home. We provide a brief background to shifting public health discourses on managing microbes in domestic settings over recent decades across the industrialised world, and then contrast this background with emerging advice on COVID-19 from news and advertisement sources. We conclude with key areas for future research.

KEYWORDS: anti-microbial, COVID-19, domestic hygiene, human–microbial relations, probiotics, war on germs

While it is a truism to say that humans and microbes have always been on intimate terms, it was only after microbial life was made visible through microscopes, and then understood to be potential harbingers of disease, that humans began to interact with them in certain ways (Armstrong 2017; Martens and Scott 2006; Tomes 1999). The nineteenth-century ‘germ theory of disease’ heralded a breakthrough in understanding infection and contagion, but the human body also largely came to be viewed as ‘the site of a battle between germs and disease’ (Kate Forde, cited in Barton 2011). Despite the contemporary view of human–microbial relationships being more nuanced and perhaps ‘probiotic’, the idea of microbes as antagonists is re-emerging with a vengeance in the way people are dealing, and are told to deal, with COVID-19,¹ where war metaphors have become, yet again, a common currency in text and talk (Nerlich 2020a, 2020b). In the long term, this could have severe implications for the emergence of antibiotic re-

sistance as well as create the conditions for future pandemics (Blaser 2014).

In this article, we outline some recent developments in the discursive landscape of human–microbial relations in the home and beyond, drawing on online media and on UK newspapers and advertising sources. Our analysis suggests that discourses associated with intimacies between humans and microbes are shifting (back) towards an overwhelmingly adversarial relationship due to the impact of COVID-19. We conclude by highlighting key areas for future research. The article links to a growing interest in anthropology towards studying human–microbial relations (e.g. Giraldo-Herrera 2018; Helmreich 2014; Tsing 2015) and sits within a broader line of scholarship associated with multispecies anthropology (see Kirksey and Helmreich 2010; and Swanson 2017).

We centre our discussion on domestic, not hospital or farm, hygiene, and on topics that have come sharply into focus with the advent of emergent hu-

man, animal and zoonotic diseases, such as foot-and-mouth disease (2001), SARS (2003), avian influenzas (2004–2007), swine flu (2009), Zika (2016) and now COVID-19 (2019–2020) (see Brown et al. 2009).

We use the concept of ‘microbes’ and ‘microbial life’ in their broadest sense. While micro-organisms are technically defined as microscopic biological (cellular) entities such as bacteria, archaea, fungi, algae and protozoa – viruses (which are not cellular) – are also often considered to be (sub-)microscopic biological agents or microbes (Microbiology Society n.d.; Sattley and Madigan 2015). These complexities suggest engaging in multispecies studies requires ‘wrangling with species (and genus, family, order, class, phylum, kingdom, domain, when possible)’ (Kirksey and Helmreich 2010: 563), in order to consider, rethink and reframe natural and cultural categories of life.

Brief Background to (Domestic) Hygiene and Human–Microbial Relations

The history of hygiene management is complex and beyond the scope of this article. In this section, however, we sketch an overview of the dynamic, sometimes contradictory, and frequently confusing discourses linking microbes to hygiene (including in the home) over the past decades.

The nineteenth-century ‘germ theory of disease’ framed scientific knowledge production on the ways in which microbial agents and humans live with and influence each other. By 1900, many major diseases had been identified through the new science of microbiology, although there were still gaps in scientific knowledge about the exact mechanisms through which infectious diseases spread. Germ theory introduced a new language and concepts across the world – especially through theatre – ‘where tropes of contagion, pathology, inoculation, and immunity received new currency’ (Garner 2006: 2). Metaphors were deeply entangled with both old colonial and new scientific microbial discourses (Tomes 1997), such as associations between microbes and imperialist invasion (Otis 1999). Drawing on the work of Martina King, James Stark and Catherine Stones (2019: 289) argue that ‘the longstanding stereotype of the evil, menacing, invading, anthropomorphic germ’ was in place by 1900.² In the following decades, analysis of British public health posters in the first decades of the twentieth century reveal that these war-related metaphors continued, with germs depicted as being ‘synonymous with invading fascist forces’ (Stark and Stones 2019: 299).

From the 1950s onwards, the *Good Housekeeping* lifestyle magazine provided a record of cautionary messages about germs in the domestic sphere, which urged generations of diligent homemakers to beware of the unseen yet dangerous adversaries in their homes and to purchase an increasingly wide array of bleaches and cleaning products to wipe out microbial life wholesale (Martens and Scott 2005, 2006).

In the late 1980s, the purported benefits of the wide-scale eradication of microbes in the home was problematised with the advent of the ‘hygiene hypothesis’, which signalled an understanding of a more co-dependent relationship between humans and microbes, linking a lack of exposure to infections in infancy and childhood to the dramatic rise in allergic diseases, especially in highly urbanised and technologised nations (Strachan 1989). Although the hygiene hypothesis has been challenged in favour of more nuanced understandings of the link between immunity, hygiene and human health (see Bloomfield et al. 2016), it does herald the emergence of a new discourse suggesting that humans have become ‘too clean’ (Bloomfield et al. 2006; Bloomfield et al. 2012; Dion et al. 2014).

This means that two types of discourses have come into conflict with one another, with the first framing microbes as deadly enemies and the second framing them as potential ‘old friends’ (see Rook 2009). This was neatly encapsulated in Alexander McCall Smith’s novel *Friends, Lovers, Chocolate*:

There were friendly bacteria, were there not? Colonies of tiny beings who lived on us in perfect harmony with their hosts and were ready to deal with the real invaders, the unfriendly infections, when they arrived; and yet at every bath we depleted their ranks, washing away their cities, their dynasties, their cultures. (Smith 2005: 86)

In the early 2000s, advertising about the potential benefits of probiotics increased (Koteyko 2010) alongside rising speculations of an antibiotic apocalypse (Nerlich and Hellsten 2009). Microbiologist, Martin Blaser (2014) highlights in *Missing Microbes*, the connection between a lack of microbial diversity and the risk of contemporary pandemics.

As the benefits of probiotics have grown in popularity – alongside popular science books explaining links between risks to human health and wide-scale anti-microbial activities – Heather Paxson (2008) and other scholars have observed a move towards ecologically informed ‘post-Pasteurian’ relations with microbes, highlighting new (and old) intimate and companionable probiotic and symbiotic relations

alongside more ambivalent ones (e.g. Lorimer 2017). Scholars interested in ‘microbe studies’ have highlighted the complexity of and multiplicity in the ways that human–microbe relations manifest themselves and have recognised the challenges faced by social scientists and humanities scholars in engaging with these complexities (see Greenhough et al. 2020). From killing to caring, microbes have troubled many categories that seemed to have been clearly delineated in the past, and they have transgressed boundaries between different species (Giraud et al. 2019; Helmreich 2016; Koteyko et al. 2008; Nerlich et al. 2009). A few studies have focussed on viruses specifically (e.g. Brives 2018; Dupré and Guttinger 2016; Greenhough 2012), but these still reveal the messiness of thinking and living with these largely invisible agents.

Contemporary Ambivalence and Ambiguities in Managing Microbes

Recent studies have shown the confusion and anxieties associated with managing microbial ecologies in the domestic space, especially in terms of how to maintain a home that is both hygienic and healthy. In particular, the University of Oxford’s Good Germs Bad Germs project³ brought to light how a group of households in the United Kingdom struggled with biopolitical norms in association with cleaning (Greenhough et al. 2018; Lorimer et al. 2019). The following extract from an interview with a couple, for example, illustrates how the smell of bleach can be interpreted as a sign of cleanliness:

FS1: *You use your sense of smell a lot, don’t you?*

MS1: *If something smells bad, then that’s usually a sign that something’s not right.*

Q: *Yes, and in reverse, if there was a strong smell of bleach or,*

MS1: *Yeah, you’d realise that somebody had cleaned, yeah. (Exit interview 114, July 2017) (Greenhough et al. 2018: 5)*

However, this observation linking the smell of bleach to cleanliness contrasted with concerns from other households about the detrimental impact that bleaching could have through widescale eradication of a household microbiome:

Some people I know bleach everything, so they’re sort of like wiping everything out. It actually doesn’t necessarily make you healthier because we live together in harmony with them most of the time, and we haven’t been ill from what we live with, so it shows that it’s, you know, it’s fine

really. We should keep them there. (Exit interview 104, July 2017). (Greenhough et al. 2018: 7)

This second quote alludes to a more probiotic approach to the domestic microbiome. However, Beth Greenhough and colleagues (2018) caution that more ‘discriminating’ hygiene practices are often a luxury for the more privileged, and (citing the work of Paxson and Helmreich 2014: 183), ‘microbes can be promising for those people who no longer have to worry about smallpox, polio, cholera, and other agents of infectious disease.’ It is important to acknowledge, therefore, how variations in access to healthcare and hygiene infrastructure across different cultural contexts might shape the possibilities for balancing post-Pasteurian or probiotic practices in the home, and careful control of harmful organisms. This is starkly revealed in the current inequalities between more affluent communities and those where limited access to clean water and living in dense informal housing makes it impossible to follow COVID-19 hygiene and social distancing guidance (see Du et al. 2020; and Kalache 2020). While acknowledging these important inequalities, our analysis turns to exploring how advice on coping with COVID-19 might be influencing cleaning and hygiene behaviours broadly across domestic settings.

To Bleach, or Not to Bleach? – That Is the Question

Hygiene became the focus of attention in early disease management of COVID-19 with hand-washing recommended and ritualised in households around the world (WHO 2020). Articles appeared providing advice to householders on how to use hygiene measures in the context of the pandemic, and the use of bleach in particular has become widely proposed as a possible strategy to tackle the virus – for example, *The Sun* promotes cheap bleach for ‘beating’ COVID-19 (Coleman 2020). An article in *The Conversation* provides an overview of cleaning products to use, stating that bleach is ‘very effective’ (Ciric 2020). Producers of cleaning products stepped up their advertising, and advertisements merged with ‘health and risk communication’ (see Reckitt Benckiser 2020; and Unilever 2020).

Going further, some people not only kept their homes clean, they also wanted to clean their bodies by ingesting bleach – a belief reinforced by US President Donald Trump (BBC News 2020). Our bodies, already said to be ‘at war’ with COVID-19, became another

theatre of war where weapons of hygiene were deployed. After Trump's fateful announcement, warnings were immediately issued by the manufacturers of Lysol and Clorox, who urged buyers not to use their products as 'medicine'. Despite this warning, according to the US Centers for Disease Control and Intervention (CDC), 'many Americans have rubbed cleaning products on their skin, sprayed themselves and their food, inhaled the fumes of household cleansers, or drunk or gargled with diluted bleach' (Enright 2020).

This focus on chemical eradication of germs contrasts with the recent promotion of more microbiome-friendly products (e.g. *Ecover* household cleaning products and *Dove* body wash), and popular science books, which have raised awareness of the importance of supporting microbiome diversity for health (e.g. Yong 2016). The pandemic is reconfiguring human-microbial relations and practices yet again, radicalising or resurfacing existing (and opposing) tropes and creating new ones. This means that existing confusion and ambivalence about hygiene and cleanliness is heightened even further in the light of the COVID-19 pandemic. The extent to which this confusion and ambivalence will endure remains to be seen.

Conclusion

There is a need for anthropologists to capture transforming intimacies and changing discourses of human-microbial life during and after COVID-19 both in the home and in other environments.

We agree with Timothy Hodgetts and colleagues (2018) that attention needs to be paid to the imageries and metaphors that are mobilised in association with human-microbe relations in the home. As Ted Cohen (1979) pointed out, metaphors create intimacy and common ground between people, for good or for ill. Metaphors around war on COVID-19 especially need to be critically examined for their political, social and psychological implications.

Media sources suggesting new, diverse and creative practices of disinfection, cleaning and managing spaces and surfaces have emerged during the lockdown. What are these new practices and how might they influence the design and management of spaces and human-microbial relations in the future?

Between the *ying* of bad germs and the *yang* of good germs, it is necessary to find alternative ways of talking about and enacting home hygiene in general and COVID-19 in particular if we want to find ways

of safely 'being alongside' (Latimer 2013) bacteria and viruses rather than waging war on them. This also entails scrutinising how capacities to do so are shaped by historical and contemporary inequalities (Giraud et al. 2019).

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Notes

1. Coronavirus disease (COVID-19) is an infectious disease, caused by SARS-CoV-2. For consistency, we will use COVID-19 throughout this article. For more on the naming conventions, see WHO 2019.

2. Some of these political associations have come to the fore again with COVID-19, especially through metaphors focused on the evil-doings of an 'invisible enemy', blamed by US President Trump, in part, on immigration (Wingrove 2020).
3. Funded by the Economic and Social Research Council (<https://esrc.ukri.org/>).

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